

# PURE WATER



MANUFACTURED BY

PASTEUR-CHAMBERLAND FILTER CO Dayton, Ohio, U.S.A.

1895.

# Exposition Universelle,

PARIS, 1889.



The Only Gold Medal Awarded

in the Class of Ibygiene.

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HIGHEST AWARD FOR

GERM-PROOF FILTER,

World's Columbian Exposition,

CHICAGO, 1893.

## THE PASTEUR

# Germ-Proof Water Filter.



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## The Pasteur-Chamberland Filter Company,

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A CHARLES TO DESCRIPTION OF THE PARTY OF THE



LOUIS PASTEUR.

AS born in the village of Dole, France, December 27, 1822. He took his degree in 1847; was Professor of Sciences at Dijon from 1848 to 1849; afterwards of Chemistry at Strausburg until 1854, at which time he was made Dean of the Faculty of Sciences at Lille. In 1857 he was called to Paris and given a chair in the *Ecole Normale*. Toward the end of 1863 he assumed the chair of Geology, Physical Science and Chemistry at the School of Fine Arts, and afterwards that of Chemistry at Sarbonne. In 1873 he was elected an associate member in the Academy of Medicine, and in 1874 the Government granted him a pension of 20,000 francs.

His discovery of the germ of hydrophobia and the certain means of preventing that dread disease by innoculation gave him, perhaps, the greatest prominence and widest renown. In all of his experiments it was imperative to their success to have a medium that would separate the germs from their cultivation media, and these experiments suggested to his co-laborer, Dr. Chamberland, that the germs of drinking water were as susceptible to this treatment as those of other liquids. The result of years of experimenting was the inventing and perfecting, in 1884, of the Chamberland "Bougie filtrante" or filtering tube, which is more fully described on page 4.

This Filter was invented in my laboratory where its great usefulness wish it to bear my name.

PARIS, FRANCE, March 1, 1886.

Is put to test every day. Knowing its full scientific and hygenic value, I

& Sarkany

#### PURIFICATION OF WATER.

ATER is no more necessary to life than pure water is to health. Because persons have drank questionable water and still live is no evidence that they would not have lived better on pure water. Because one survives a dose of poison it is no reason that poison is good, or even harmless.

It is reasonable, if badly polluted water causes severe and fatal disease, that slightly impure water may slowly undermine the health by being the cause of a host of ailments and inabilities of body for which the suf-

ferer finds no apparent cause.

Owing to its absorbent qualities, pure water is never found in nature; it is strictly an artificial production. In this country millions of dollars are expended annually in the experiments of furnishing a pure water supply for cities and towns by means of mechanical filtration, which may be either natural or artificial, and, while this may have the effect of clarifying it sufficiently to render it fit for manufacturing or boiler use, yet to properly filter river and reservoir water by wholesale and deliver it pure is an impossibility, because no artificial method of purifying the city water supply has thus far ever completely removed all organic matter and germs, which are the most important substances to be removed from drinking water. Since many zymotic diseases are produced by infectious germs that gain admission to the system through sewer contaminated water, and, such being the case, a good filter ought to be as much a part of the furnishing of a well ordered household as a chair or a dining table; a poor one, by giving a false sense of security, will do more harm than good, for at the best they only strain out the coarser particles, and are admirable culture places for all the disease germs found in water.

When a city is supplied with only doubtfully pure water, no family should be without a private filter. Even the purest natural waters can often be improved by proper filtration, for the suspended substances will be removed and chemical changes often effected by this operation that cannot fail to be beneficial. The highest authorities on the subject of sanitary filters agree that the best are unglazed porcelain, because they have the exact porosity to restrain all germs and yet permit the free flow of water,—can be readily cleaned, and are also susceptible of being easily sterilized. The filtering medium of the Pastuer Germ-Proof Filter is fully

described on page 4.

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Professor Lucius Pitkins, Ph. D., Analytical Chemist of New York, says: "A filter is essentially a sieve, and the organisms which it must stop in their passage are, to put an average figure, but one twenty-five thousandth of an inch in diameter. Filters packed with sponge, charcoal and gravel catch only the coarser particles of floating matter, and are no better than a flannel bag tied to a faucet. These filters pollute the water if not kept scrupulously clean; the impurities collected decompose and become more dangerous than in their original state."

From Philadelphia "Press" September 12, 1889.

Extract from memoranda made by Dr. Chas. M. Cresson, relative to Water Supply and Disease, in the city of Philadelphia. "As to the germs of disease, however, I have found but one filtering device which will effect their removal, and that device is the Pasteur-Chamberland Filter."

HE CHAMBERLAND "BOUGIE FILTRANTE," or FILTERING TUBE, in which lies the particular merit of the Pasteur Filter, was invented in the laboratory of Louis Pasteur by his co-laborer, Dr. Charles E. Chamberland, Director General of the Pasteur Institute. It was the re-

sult of years of experiment of making this application of the processes employed in the laboratory for separating microbes from their cultivating media. The principle had been in use there as applied to other liquids, and Professor Chamberland conceived the idea of making a different combination of the various ingredients used in order to produce a biscuit in which the pores would be so small that while they would restrain all the different germs, however minute, yet would admit the free passage of water. The result of his experiment was submitted to the Academy of Sciences of France at its annual public meeting, December 1st, 1885, and received their unqualified endorsement: A committee consisting of Messrs. Boussingault, Bouley. De Freycinet, Peligot and Schloesing, to whom the matter was referred, unhesitatingly stated that they, the "the bougies filtrantes." absolutely eliminate all microbes and all germs, and that they have solved one of the most important of hygenic problems. The success of this system has induced a number of imitators, and while some of them have the assurance to claim they are equally as good as the Pasteur, yet none are found who have sufficient audacity to claim superiority and when it is considered that the component parts of this filtering tube are the result of careful and ex-

tended experiment and scientific investigation, and that its merit consists in certain defined proportions of each of the ingredients, it will be readily understood that the hap-hazzard productions of the average pottery, as produced in this country, could hardly lay claim to any merit as a germ-proof filter, and ought to feel complimented to be classed an ordinary

water strainer.

For our manufactures, in the application of this wonderful invention to the sterilization of water, we claim the credit of expert construction in the matter of preserving the water in a sterilized condition as it is delivered by the bougie. The different constructions of the apparatus and the peculiar merits of each are detailed under appropriate headings in this catalogue. They are designed to operate under city water pressure, as well as by percolation or under the pressure of the weight of water alone. The cuts show the appearance of the tubes, which are 10 inches long, 1½ inches in diameter and walls ½ inch thickness. The process of cleaning is to remove them from the filter, wash off the accumulation with water and a stiff brush, replace them in the filter and they are ready for use. The genuine bougies are made at Sevres, France, out of a peculiar clay found only at that place, and are stamped: "Filtre Chamberland-system Pasteur. H. B. et Cie Choisy-le-Roi."

For the application of the filtering tube to the sterilization of water

in the different forms of construction, see page 5.

HILE the principal merit of the Filter lies in the Chamberland bougie filtrante or filtering tube, yet there is no less an art in the construction of an apparatus that will meet the full requirements of a scientifically made filter, and the application of it in our manufactures represents the carefully tested results of years of experiments and expert study in the construction of such an appliance; one that is capable of retaining the tubes in such position as to secure the best results in the matter of delivering sterilized water and then preserving the water in the same sterilized condition. We make the application in two forms. The Pressure Style, to be attached to the city water supply and operated under the pressure from that source, and the Non-Pressure, which filters by percolation or the gravity of the water alone. The Pressure Filters, under a pressure of 60 pounds, will yield about three gallons of water per hour per tube; but as the amount of suspended matter and its character is so variable in different localities, no guaranteed quantity can be given. As the tubes become coated with the substances taken out of the water the supply is correspondingly decreased. They can be restored, however, by washing them, or by adopting such other directions as accompany each Filter.

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The Non-Pressure Filters will yield about one and one-half gallons of water per hour per tube in twenty-four hours; the condition of the water being similar to that as noted above. The different constructions of the Pressure Filter are the Combined Filter and Cooler, constructed with a Cooler containing the Reservoir for filtered water in a separate compartment, and in which provision is made for storage of ice. The bougies are in a separate tube case attached to the outside of this Cooler, the water being admitted into the tube case and passing through them by pipe connection into the filtered water reservoir. This construction is more fully explained on pages 6, 7 and 8.

In the construction of the Globe Reservoir, pressure, the filtering tube is placed in the lower compartment, to which is attached a Reservoir in globe shape, having different capacities, varying according to the number of tubes. The connection is made by means of a screw collar. The attachment to the city water supply is by means of a cock in the lower part of the tube case. These are illustrated on pages 9, 10 and 11; and in this class of construction is included the Bar Filter, illustrated on page 17. The Non-Reservoir Filters, pressure, illustrated on page 12, and in larger sizes, operating, however, on a lower water pressure, the General Filter on page 15, have no reservoir for filtered water, and are intended to be used in connection with reservoirs for storage purposes, which may be either the porcelain lined Tanks, full description of which is given on page 16, or with a special Reservoir which may be otherwise constructed.

The Suspended Filters, made in two sizes with one and three bougies respectively, are intended to attach directly to the water supply pipe by means of whatever style cock may be deemed best. This can be used either for drawing water direct or, where a storage capacity is advisable, to be used in connection with the Storage Jars, which are illustrated on page 19. The Suspended Filters are illustrated on pages 13 and 14.

The Non-Pressure Filters, which are intended to filter by percolation, or the gravity of the water alone, are the Vesta, which is made entirely of metal and is fully described on page 20; the Vega, which has a receptacle for unfiltered water, of metal, while the Storage Jar is of Bristol ware, is illustrated on page 21; the Isis, which is constructed similar to the Vega, only the Reservoir has no separate ice chamber, is illustrated on page 22; and the Leda, which is constructed similar to the Isis, only considerable lower in price, is illustrated on page 23. The Tourist Filter, which operates on the siphon principle, by means of a small pump that accompanies each one, is fully illustrated and explained on page 24.

The Pedestals, which are illustrated on page 25, will be found very desirable for mounting the Filters and placing them in position in residences or offices.

Style "NYSA," Combined Filter and Cooler. Pressure.



HE "Nysa" Combined Filter and Cooler, pressure, is made in brass and nickel plated, or of best quality of sheet zinc jacket and copper plated iron castings, handsomely painted and decorated, with nickel plated Filter and connections. The walls of the cooler are so constructed as to prevent excessive consumption of ice; and as the ice is in a separate compartment, there is no possibility of contamination of the filtered water from this source. The superiority of construction over the Perfection and Polaris, which we have discontinued making, will be apparent at a glance. The improved inlet connection is from the filter to the cooler through the faucet. When the faucet is closed the water is flowing into the cooler through the faucet. ing into the reservoir from the Filter, and when the water is being drawn from the faucet it shuts off the Filter; thus insuring cold water direct from the reservoir.



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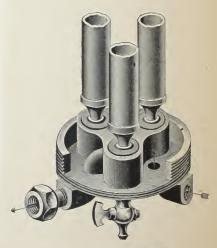


Nysa Combined Filter and Cooler on Pedestal.

HE "Nysa" Combined Filter and Cooler can be placed on brackets or on a pedestal, as shown in the accompanying illustration; the connections, etc., being made through the center of the pedestal, which hides all the pipes and connections from view.

This style of Pedestal is listed Puff and Pipe. For other style of Pedestals. see illustration, page 25.

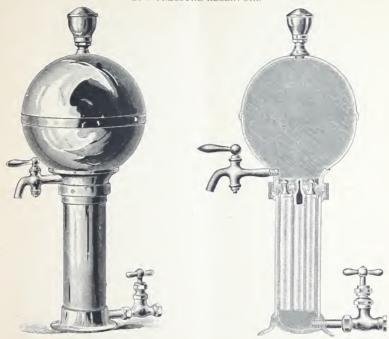
We also call attention to the construction of the raised tube plate, as shown below.



Nysa Filter-Raised Tube Plate.

Style: "GLOBE RESERVOIR." Pressure.

LOW PRESSURE RESERVOIR.



EXTERIOR VIEW.

SECTIONAL VIEW.

HESE Filters are constructed in all essential features like the high pressure Reservoir Filters on page 10, except that the city water pressure is the same in the Reservoir as in the other part of the Filter.

The small Air Valve shown, permits the air to enter or escape when comptying or filling the Reservoir with water. This Filter is especially adapted for use where the city pressure is not to exceed 30 to 40 pounds, and is somewhat cheaper than the high pressure Reservoir Filter.

TELEGRAPH CIPHER.	DESCRIPTION.	Cap. of Reservoir	No. of Tubes.	Height of Filter. Inches.	Diameter of Base. Inches.
Ow1	No. 1 C, Reservoir	3, Gal.	1	22	31/4
Ox	No. 1 D, Reservoir	112 Gal.	1	24	334
Oyster	No. 1 E, Reservoir	2 Ga1,	1	25	332
Inread	No. 3 C, Reservoir	3/4 Gal.	3	23	5
Thistle	No. 3 D, Reservoir	1½ Gal.	3	23	5
Snake	No. 6 A, Reservoir	1½ Gal.	6	221 2	6
Stone	No. 6 B, Reservoir	2 Gal.	6	23	6
Гад	No. 12 C, Reservoir	2 Ga1.	. 12	24	71/2
Гор	No. 12 D. Reservoir	3 Ga1.	12	241/2	716
Гиь	No. 12 E. Reservoir	5 Ga1.	12	28	71%
Ggg	No. 18 C. Reservoir	3 Ga1.	18	28 25	9
Sye	No. 18 E, Reservoir	5 Gal.	18	28	9

For full description of Globe Reservoir, see page 11.



#### EXTERIOR VIEW.

#### INTERIOR VIEW.

HE Globe Reservoir Filters, with high pressure style of reservoir, are so constructed that when the reservoir is full the valve in the tube plate shuts off, thereby taking off all presdescribed on page 11, with the exceptions as noted, and are intended for use where the pressure is in excess of 40 pounds.

Telegraph Cipher.	High	DESCRIPTION. Nickle Plated. Pressure Style, Reservoi	r.	Cap. of Reservior.	No. of Tubes.	Height of Filter. Inches.	Diam, of Base. Inches.
Thumb No Throw No Salt No Snag No Snub No Twirl No Twist No	3 J, 3 K, 6 J, 6 K, 6 L, 12 L,	Reservoir		1½ Gal. 2 Gal. 1½ Gal. 2 Gal. 3 Gal. 3 Gal. 5 Gal.	1 1 3 3 6 6 6 6 12 12 18	24 243/2 24 241/2 24 241/2 26 26 29 26	33/4 35 55 6 6 71 71/4 9

GLOBE RESERVOIR-PAINTS

TANTED RESERVOIR AND TO	BE CASE AND	NICKEL PLA	TED TRIMMINGS	
Painted.				
Orb No.1 R, Reservoir No.3 R, Reservoir	1½ Gal.	1	2412	312
For full description	1½ Gal.	3	25	3

cription of Globe Reservoirs see page 11. For capacity see page 5.

Btyle: "GLOBE RE-ERVOIR." Pre mae

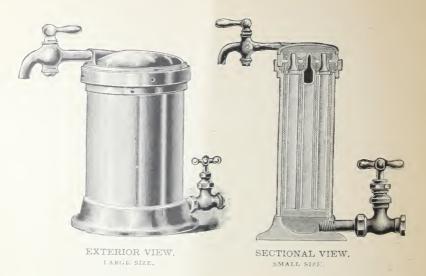


Shown Attached Over Kitchen Sink

HIS illustrates one manner of altaching the Globe Reservoir Filter for practical use. The size here given is a single tube only; the other sizes can be attached in the same manner. The Globe Reservoir Filter is made of brass in precise plate finish. It has two or parate compartments—the tube case, in which are the bongles, and the reservoir for litered water, joined one above the other by means of a screw-collar and rubber gasket. The Germ-Proof Filter Tubes are inspended from the bottom of the reservoir, as shown in the Sectional View on pages 9 and 10. The nipple ends of the tubes are inserted and held firmly in the tube-plate by means of rubber collars, which also prevent the passage of unfiltered water. The water from the pipe is admitted into the tube case, and, by pressure from the water supply is forced through the walls of the tubes into the upper or nitered water chamber, from which it may be drawn by means of the cock in the side.

We also make this filter in a painted finish, with the trimmings nickle-plated, which will be found under the list of Globe Reservoirs Painted [For capacity see page 5.]

Style: "NON-RESERVOIR." Pressure.

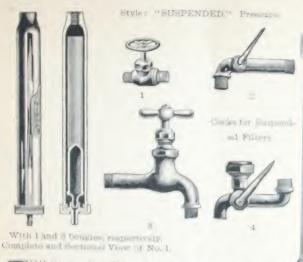


HE Non-Reservoir Filters are made of brass, finished in nickel plate, and made in four sizes, with three, six, twelve and eighteen tubes, respectively. The No. 3 has the dome-shape top, while the others are as shown in the illustration. The filtered water is discharged direct, and as rapidly as it is filtered. This style of Pasteur Filter is used most satisfactorily with our water storage jars or some other suitable receptacle for the storage of the filtered water, especially if a larger amount of filtered water is required than can be furnished by the flow of tubes direct.

All sizes of the Non-Reservoir and Reservoir Filters must be placed on a bracket or shelf: They cannot be suspended from the pipe like the Suspended.

TELEGRAPH CIPHTER.	DESCRIPTION	Cap. of Reservoir.	No. of Tubes.	Height of Filter. Inches.	Diameter of Base. Inches.
Tov	No. 3. No Reservoir No. 6. No Reservoir No. 12. No Reservoir No. 18. No Reservoir	None.	3 6 12 18	13 15 16 17	5 6 71 9

For capacity, see page 5.



THE Suspended Filter is to attach directly to the water supply pipe by meanwol mor or another or the connections as shown to the Bustrations. It is made of brass and finished in make plate or tinned In the single tube. We also make this style in three tubes, finished in makel plate. By the use of the outon connection, with the No. 1 Suspended, untiltered water can be drawn when desired; the cock has two water Wita Dagon Courses ways one as an order for the amplifued water Headons out of the cock direct,) the other heading to the Piller. Be the use of the storage jar, as Illustrated on page 21, you can always have on hard an abundance of Obered water.

Stone Albanders.

Telegraph Cristian	Wescaltylos:	Cap. of Remediate	No. of Traject	Beign (set Frieder Freehon	Iron or lives Inches
Sun Star- Sole	No. 1, Pinned No. 1, Na helod No. 2, Nicholad	None Mouse None	1	-	-

NOTE - All Suspended Filters are flaved been cooked. The society for the wind the Walconded Pilier are No. 1, Per. No. 2 likest Nove Levels. No. 2 front Storm Compressions. No. 4.

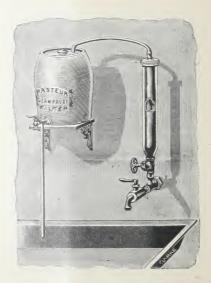
#### SUSPENDED COCKS

Pe) Beot Frek	Bent Non-Lever Trans.			
Diller	Man Non-Level, Nicholas	Fatt 1		

Bent Nurr Laver cocks will be shipped out all orders the No. 1 Suspended Filture, and Boys New Compression Cucks, with No. 5 Suspended Piper, warms are thus wide in large

For expueste, see page 5.

Style: "SUSPENDED." Pressure, With Storage Jar.

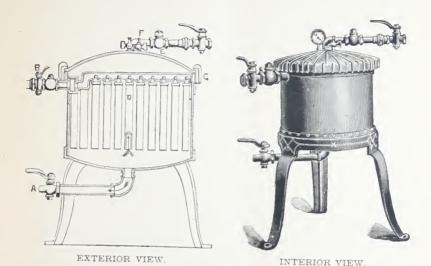


STYLE: "SUSPENDED."

HE Suspended can be attached to the service-pipe and water drawn direct, or can be used in connection with a Storage Jar, as shown in the above illustration. The attachment is made by the insertion of a T and the pet cock, as shown on page 13, cut 1, in the delivery-pipe to which the Filter is attached, and the Jar placed on a shelf or brackets. Where a greater quantity of water is required, we have this style in a three-tube Filter, which can be attached in the same manner. This Jar is made in three sizes, two, three and five gallons' capacity, respectively. The five gallon jar only has separate ice chamber.

For full description of Storage Jar see page 19.

Style "GENERAL," Pressure.



HIS Filter is admirably adapted to furnish a supply of pure water to public schools, colleges, factories, stores, etc., where a large quantity of water is required. They are made in three sizes, having 40, 10 and 100 tubes respectively. Being of large diameter they are furnished with a pressure regulator, set at 25 pounds per square inch, as that is considered the maximum strain that should be put on the outer casings for continual work. If greater capacity is required, two or more can be connected together, thus furnishing any desired quantity of water.

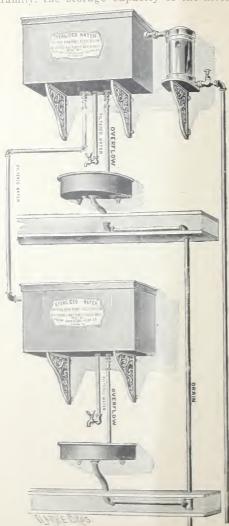
#### GENERAL FILTERS.

Telegraph Cipher.	DESCRIPTION.	Cap. of Reservoir.	No. of Tubes.	Height of Filter. Inches.	Diam, of Base, Inches,
Slate	No. 40, No Reservoir	None.	40	30	13
	No. 70, No Reservoir	None.	70	30	15
	No. 100, No Reservoir.	None.	100	30	17

Where

Application of the Pasteur Germ-Proof Filter System for the Supply of Pure Drinking Water for Public Buildings and School Houses.

HE first introduction of the Pasteur Germ-Proof Filter for the sterilization of water comprehended its application only to the small domestic filter with a view of furnishing the water supply for the family, the storage capacity of the filtered water being a part of the



apparatus proper. As the merits of the filter became more generally known and the advantages of pure drinking water more appreciated, there came an imperative demand for the application of the system to the supply of larger quantities of sterilized water than could be contained in the capacity of the domestic Filter. This made it necessary to devise some plan by which the Filters could be utilized in the matter of furnishing a supply for school houses and public institutions. With the view of accomplishing this object, we have had constructed Reservoirs of porcelain lined iron with a capacity of 20 gallons. They are fitted with covers and their construction is such as to prevent the admission of dust or germs or any air contamination to the filtered water. They are furnished complete with selfclosing faucets and all necessary connections. By the application of this system the Filter is placed at a convenient location to the tank, (the sized Filter depends upon the number of persons to be supplied) the attachment made to the water supply with the outlet into the Tank. Where more than one floor is supplied Tanks can be placed on each g floor, and as the upper Tank fills the excess is carried to the Tank or Tanks below. When the Tanks are filled, the automatic action of the float valve stops the operation of the Filter.

The application will be readily understood by reference to the accompanying illustration. This system is in successful use in many public

schools, in the United States barracks and other public institutions.

Size of Tank-24 in. long, 15 in. deep, 12½ in. wide; Lid, 2½ in. high; Brackets. 13x13.

Style: "BAR." Pressure.

HEPastuer Germ-Proof Water Filter has become not only an article of real merit, but a very profitable investment for usein saloons. The saloon keeper who caters to the better and more fastidious class of trade knows that the more attractive his establishment is made the more profitable his business. Wherever hydrant water is known to be impure it must be discarded and substituted with Apollonaris or other bottled waters as a side drink, but where a Pasteur Fllter is used, and particularly when it is in sight of the public, the use of bottled waters can be practically dispensed with. The amount of money saved in bottled waters will generally pay for a Pasteur Filter in from three to six months.

This Filter is especially constructed to meet the requirements of the very finest bars. The filter can be taken apart without drawing any of the filtered water out of the reservoir, so that there is no time when filtered water can not be obtained. The apparatus is constructed with a nickle plated pan and with the necessary drip basins to prevent any water from getting on the counter. The whole apparatus sets up clear of the counter so that

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moisture can not get under it, and it is one of the most ornamental fixtures that can be placed on a first-class bar. Thousands of saloons are to-day using the Pasteur Germ-Proof Filter and would not dispense with its use under any consideration.

Telegraph Cipher.	DESCRIPTION,	Cap. of Reservoir.	No. of Tubes.	Height of Filter. Inches.	Diam. of Base. Inches.
	No. 3 No 6	2 Gal. 2 Gal.	3	24 25	12 12

Style: "EXHIBITION." Pressure



UR Exhibition Filter is intended for show windows. One outlet delivers unfiltered water, the other the filtered water. We furnish these complete, with nickeled overflow pans, stands, glasses, etc. Where the water supply is muddy or cloudy it is of great advantage in giving a practical demonstration of what the Filter is capable of doing, besides being a very attractive arrangement for windows.

Telegraph Cipher.	DESCRIPTION.	Cap. of Reservoir.	No. of Tubes.	Height of Filter. Inches.	Diam. of Base. Inches.
Erie	No. 3	None.	3	13	5
Elm.	No. 6	None.	6	15	6
Elk.	No. 12	None.	12	16	7½

## STORAGE JAR AND ICE JAR

FOR USE WITH

# The Pasteur Germ-Proof Filter.



HESE jars are of the best quality of Bristol stone ware, manufactured expressly for this Company, and are intended for use with the Suspended Filter, where a larger quantity of water is required at one time than can be supplied by the action of the Filter. By the use of a storage jar you can always have on hand for immediate use a quantity of filtered water. They are made to contain two gallons, three gallons and five gallons, respectively. The five gallon size is supplied with an interior jar for ice, which is placed inside of the storage jar, thereby keeping the water cool with no danger of contamination from the melted ice. The three gallon and two gallon sizes have no ice jar. These jars are furnished with cocks and overflow pipes and all necessary connections.

Telegraph Cipher, JAM; Description, 5 Gallon with Ice Jar.

Telegraph Cipher, JAIL; Description, 3 Gallon with no Ice Jar.

Telegraph Cipher, JUG; Description, 2 Gallon with no Ice Jar.



INTERIOR. 3-TUBE.

HE Isis Filter and Reservoir, non-pressure, is of two parts. The upper or unfiltered water compartment, in which also are the litering tubes bougiest, is of metal and is painted three coats of paint, hand decorated and vanished. The lower or filtered water reservoir is of a very fine Bristol stone ware, especially made for this purpose. The Isis is much more

Is made in two siz lively. It is especial acturies, boardin not desirable to the strength of t	rpose. The Isis is much any other non-pressure filtees, four and seven tubes, recially adapted for use in g houses, and places where is ice for cooling the wate. Vega, of like capacity, he material for these Filters we are enabled to put thery law price.	er. It spect- large tit is r, and	GERM P	ROOF)	
Telegraph Cipher.	DESCRIPTION.	Cap. of Reservoir.	No. of Tubes.	Height of Filter. Inches.	Diam. of Base. Inches.
Ice No	. 7	3 Gal 3 Gal.	4 7	38 38	91,2
		22			

Style: "LEDA." Filter and Reservoir. Non-Presure-





SECTIONAL VIEW

HF. 'Leda' Filter and Reservoir, non-pressure, is to meet the demand for a cheap filter using the Chamberland bougle and combining all the advantages of our method of construction. It is made with a metal tank of about three gallons capacity, for unfiltered water, and a Bristol stone-ware reservoir for filtered water, of two gallons capacity. It has three tubes attached to a porcelain collector, and the filtration is on the siphon principle. The capacity is sufficient to supply drinking water to an ordinary seed family. By frequent filling the unfiltered water tank the quantity can be increased. The material is of the same quantly and the finish equal in every respect to the other cheap non-pressure filters of our manufacture.

Telegraph Clipher	NON-TRESSURE VILTERS. LEDA	Cap, or Reservoir	No. 0 Tabas	Bright of Filips Inches	Diraca, of Bases, because
Lens.	NV.	2 Gal.	7	311	85)



THI AND INTEREST OFFICE	
THE WORLD'S COLUMBIAN E	ŘP <b>OSITION</b>
Pay to the order of the Castern Chamberland Filter	loo 3-10.000.00
FIRST NATIONAL BANK,	,
CHICAGO CHICAGO	Truss_sor

The Pasteur Filters used in Jackson Park during the Fair were very satisfactory. The World's Columbian Exposition used no others for their visitors.

(Signed.)

D. H. BURNHAM, Director of Works. TESTIMONIAL-

# LETTERS OF CREDIT.

The Pasteur Germ-Proof Filter—The Only Germ-Proof Filter in the World.

There is no other FILTER in the world that can show, or that can procure, such unqualified indorsements of its merits as we present below for the Pasteur. Every one of these gentlemen is prominent in his community, and many are of State and National reputation.

As to Mr. Chamberland's filter, invented and tested in my laboratory, rewarded with one of the prizes of the Academy of Sciences, the full scientific and hygienic value of which I am fully acquainted with, it is on the contrary, after mature reflection and in perfect willingness, that I have authorized Mr. Chamberland to add to the words "Filtre Chamberland," these: "Systeme Pasteur."

#### Signed.

#### UNITED STATES.

Department L-Liberal Arts. 2152.

Exhibitor-Pasteur-Chamberland Filter Co. Address-Dayton, Ohio. Exhibit-Water Filter.

GROUP 147. CLASS 829.

#### AWARD.

For efficiency, as shown by bacteriological and chemical examinations. JOHN H. RAUCH, Individual Judge.

Approved: DR. K. BUENZ,
President Departmental Committee.
Approved: JOHN BOYD THATCHER,

Chairman Executive Committee on Awards.

Date, March 2d, 1894.

A MANUAL OF BACTERIOLOGY, by George M. Sternberg, M.D., Surgeon General of the United States Army; Director of the Hoagland Laboratory, (Brooklyn, N.Y.); Honorary Member of the Epidemiological Society of London, of the Royal Academy of Medicine of Royal States and Company of the American Company of the Rome, of the Academy of Medicine of Rio de Janeiro, of the American Academy of Medicine, etc.

"Pasteur, in his earlier experiments, used plaster of Paris as a filter, and subsequently resorted to the use of unglazed porcelain, through which a liquid may be forced by pressure, but which does not permit of the passage of suspended particles, however small. "As the porcelain filter is the most reliable and convenient for accomplishing the object in view, we shall not describe other methods of filtration which have been proposed and successfully used. The porcelain used is a very fine paste, manufactured at Sevres, which is moulded into cylinders (bougles) of the form proposed by Chamberland, and baked at a high temperature." temperature.

## MICRO-ORGANISMS IN WATER, by Percy Frankland, Ph. D.,

B. Sc., (London) F. R. S.

EXTRACT.

"Freudenreich points out that although opinion in Germany is much divided as to the value of this filter, yet in France there appears to be no hesitation in accepting it as a thoroughly reliable purifying agent. Miquel in commenting upon the results of some very carefully conducted experiments, says: 'Par consequent le filtre en biscuit de Chamberland est capable de retenir tous les organismes contenus dans les liquides.' It is on account of the conflicting opinions expressed concerning this filter that Freudenreich has made a special study of its behavior as regards microorganisms. He draws attention to the fact that the pressure under which the filter works is not liable to force the bacteria through the pores of the biscuit porcelain."

THE LANCET, London, September 9th, 1893. The Army Medical Department Report:

EXTRACT.

"Brigade-Surgeon-Lieutenant-Colonel Notter, Professor, of Military Hygiene.

After dealing with legislation, literature and the work of societies in connection with public health, the subject of special points of hygiene is taken up and a full description of the Chamberland-Pasteur Filter is given. The result of the experience of this filter in the French army is important. Wherever it has been possible to substitute pure for polluted water, or where, in default of this, such impure water has been systematically subjected to a filtering process by the Chamberland-Pasteur Filter, enteric fever has practically disappeared."

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